KIRICHENKO, A.N.

New data on the bugs (Hemiptera-Heteroptera) of Afghanistan. Ent. oboz. 42 no.2:373-378 '63. (MIRA 16:8)

1. Zoologicheskiy institut AN SSSR, Leningrad.
(Afghanistan--Hemiptera)

KIRICHENKO, A.N., prof., doktor biol. nauk; NARZIKULOVA, M.N., doktor biol. nauk, red.; LUPPOVA, Ye.P., kand. biol.nauk

[Hemiptera (Heteroptera) of Tajikistan] Poluzhestokrylye (Hemiptera-Heteroptera) Tadzhikistana. Dushanbe, Izd-vo AN Tadzhik.SSR, 1964. 256 p. (MIRA 17:7)

K[illegible], A.N., kand. tekhn. nauk

Determining the number of rotations of reduction mill rolls in rolling shaped pipe. Izv. vys. ucheb. zav.; chern. met. 7:64.

Moment and power necessary for rolling metal billets and pipe without a mandrel and in grooves. Ibid.:77-

(MIRA 17:11)

FOMICHEV, I.A.; KIRICHENKO, A.N.

Conditions for carrying out the pipe rolling process on automatic mills. Izv.vys.ucheb.zav.; chern. met. 8 no.4:135-141 '65. (MIRA 18:4)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut i Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

FOMICHEV, S.A.; KIRICHENKO, A.N.

Analytic determination of the pipe rolling moment on automatic mills. Izv. vys. ucheb. zav.; chern. met. 8 no.10:74-79 '65. (MIRA 18:9)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut; Dnepropetrovskiy khimiko-tekhnologicheskiy institut.

L 9873-66 EWI(m)/EWP(t)/EWP(k)/EWP(b)/EWA(c) JD/HM

ACC NR: AT5022780 SOURCE CODE: UR/3164/64/000/014/0022/0029

AUTHOR: Kirichenko, A. N. (Candidate of technical sciences)

ORG: VNKITP

TITLE: Roller grooving for hot rolling of oval, double-channel, D-shaped, and ribbed pipes

SOURCE: Dnepropetrovsk. Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorsko-tekhnologicheskiy institut trubnoy promyshlennosti. Proizvodstvo trub, no. 14, 1964. Sbornik statey po teorii i praktike trubnogo proizvodstva (Collection of articles on the theory and practice of pipe production), 22-29

TOPIC TAGS: production engineering, pipe, hot rolling

ABSTRACT: Most pipes of these types are produced by the method of cold drawing. However, it is more expedient and economical to produce shaped pipes of uniform wall thickness by rolling them on continuous rolling mills without a mandrel. The process of producing such pipes consists in back-pressing the initial round ingot in grooves in order to attain the desired shape. A calculation method is

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L 9873-66

ACC NR: AT5022780

described using simple geometric and trigonometric equations to determine the configurations and dimensions of grooves for the shaped pipes: for the oval pipes having a proportion of wall thickness to the mean diameter of 0.03-0.15; for the double channeled having a height to width ratio of 0.2-0.7 and wall thickness to mean diameter ratio of 0.03-0.10; and also for D-shaped and ribbed pipes. Orig. art. has: 6 figures and 9 formulas.

SUB CODE: 13/ SUBM DATE: none/ NR REF SOV: 003/ OTHER: 000

BC

Card 2/2

L 31894-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k) LJP(c) WW/EM
ACC NR: AP6011787 SOURCE CODE: UR/0147/66/000/001/0073/0079

AUTHOR: Natushkin, V. F.; Kirichenko, A. N.

ORG: none

TITLE: Natural vibrations and stability of truncated structurally orthotropic shells

SOURCE: IVUZ. Aviatsionnaya tekhnika, no. 1, 1966, 73-79

TOPIC TAGS: vibration, shell structure stability

ABSTRACT: The authors study natural vibrations and stability of closed shells of revolution with degenerated poles and variable rigidity and geometric parameters. The eigenvalue determination for these shells can be reduced to a single algorithm $\nu=\nu_0\eta$, where ν is the unknown eingenvalue and ν_0 is the eigenvalue for some similar shell with constant parameters. For the case of a conical shell, such a similar shell would be a cylinder with radius equal to the average radius of curvature, height equal to the length of the generatrix and thickness equal to the mean thickness of the reference surface. The study is divided into two parts: finding the solution for the equation with constant coefficients to determine ν_0, and determining the effect of variability in the shell parameter η. Stability and vibrations of closed shells of revolution are analyzed. Eigenvalues are determined for various cases of orthotropic tapered shells resting on their edges. The case of a shell with rigidly fixed edges is considered.

Card 1/2 UDC: 539.3 + 629.13.012.2

L 31894-66
ACC NR: AP6011787

The results of this study also include smooth shells which are a special case in structurally orthotropic systems. The class of eigenvalues for real shells is included in the region of static and dynamic instability. The algorithm $\nu=\nu_0 n$ may be used for practical calculation of the eigenvalues for stability and vibrations of tapered truncated shells. Orig. art. has: 2 figure, 32 formulas.

SUB CODE 01, 13 SUBM DATE: 27Sep65/ ORIG REF: 003/ OTH REF: 001

Card 2/2 mc

FOMICHEV, I.A.; KIRICHENKO, A.N.

Conditions for carrying out the rolling process in grooves.
Izv. vys. ucheb. zav.; chern. met. 6 no.12:62-73 '63.
(MIRA 17:1)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut i Ukrainskiy nauchno-issledovatel'skiy trubnyy institut.

24.3300

S/051/62/012/003/011/016
E032/E314

AUTHORS: Batarchukova, N.R., Kartashev, A.I. and Kirichenko, A.P.

TITLE: An optical method of filtering the green line of Hg^{198}

PERIODICAL: Optika i spektroskopiya, v. 12, no. 3, 1962, 424 - 426

TEXT: It is pointed out that if monochromatic light is transmitted between two closely located absorption lines of equal intensity then the "slit" produced thereby will let through only that wavelength range which corresponds to the distance between the absorption lines. A version of this method has been used by Kessler and Schweitzer (Ref. 2 - J. Opt. Soc. Amer., 49, 199, 1959) in the case of the λ 2537 line of Hg^{198}. The present authors developed a further modification, whereby the method could be used in the visible. Fig. 3 shows the apparatus employed. The electrode-less mercury lamp 1, which is cooled by running water at 17 °C, is placed in a magnetic field of 1 400 Oe, produced by the magnet 2. The magnet has holes drilled through it so that observations can be carried out in the direction of the field. Light from the lamp is passed

Card 1/2

An optical method of ....

through the condenser 3 and the $\lambda/4$ plate 4 . It then enters the chamber 6 , which contains iodine vapour and has a total length of 50 cm. The latter is followed by a polaroid 7 , an objective 8 , a Fabry-Perot etalon 9 and the camera 10. The chamber 6 is placed inside a furnace 5 , which is heated electrically, thereby broadening the Doppler contour of the two iodine absorption lines near λ 0.5461 μ . The magnetic field produced by the magnet gives rise to the usual Zeeman splitting. The two groups of components are circularly polarized in opposite directions. By adjusting the magnetic field one can obtain two Zeeman components, one of which is located exactly half-way between the iodine absorption lines. The other component can be extinguished with the aid of the $\lambda/4$ plate and the polaroid. In this way, the width of the remaining line can be reduced by a factor of 2 . Fringes of equal inclination have been obtained for this line with a Fabry-Perot etalon separation of 75 cm, i.e. with a path difference exceeding by a factor of 1.5 the coherence limit of the green Hg^{198} line. There are 4 figures.

Card 2/3

13659

S/053/62/078/003/005/005
B163/B104

AUTHOR: Kirichenko, A. P.

TITLE: Methods of narrowing spectral lines for interference length measurements

PERIODICAL: Uspekhi fizicheskikh nauk, v. 78, no. 3, 1962, 525-538

TEXT: The accuracy of any length measurement by interference is limited by the line width of the spectral line used. The problem of producing monochromatic line sources with extremely narrow line widths is of increased interest in connection with the practical realization of the new meter definition. Various methods of reducing line widths (interference monochromatization, absorption monochromatization, interference compensation arrangements for narrowing absorption lines, laser) are reviewed. In an interference monochromator in which a Perot-Fabry etalon is used as dispersion system, single hyperfine structure components can be filtered out whose width is of the order of the Doppler width. With the absorption monochromator based on the transmission of radiation between two absorption lines split up by the Zeeman effect (Zeeman absorption filter) lines

without hyperfine structure can be produced having widths below the Doppler width. The use of the absorption monochromator, however, is restricted to such resonance lines as for most elements are situated in the ultraviolet region. In the visible region, the Hg 5461 Å line can be filtered by absorption in iodine vapour (N. R. Bataruchkova et al., Opt. i spectr. 12, 424, 1962). Using a lamp without electrodes, containing Hg^{198} vapor and a 60 cm long absorbing chamber with iodine vapor at 20°C, interference rings of equal inclination with a path difference of 730 mm, i.e. 1.5 times beyond the coherence limit for the unfiltered green Hg^{198} line, were observed. The possibility of using the iodine resonance lines to realize a light source with inverted absorption lines is studied in the Opticheskaya laboratoriya (Optical Laboratory) VNIIM. A Rozhdestvenskiy interferometer is used to observe the interference fringes corresponding to the iodine absorption lines on the background of the 5461 Å line, and the inverted absorption lines. Laser experiments and theory are not discussed in detail, but their importance for the production of intense coherent sources with narrow line width is stressed. There are

S/053/62/078/003/005/005
B163/B104

Methods of narrowing spectral ...

12 figures.

Card 3/3

KARTASHEV, A.I.; KIRICHENKO, A.P.

Measuring high path differences by means of interference monochromatization. Izm.tekh. no.8:9-11 Ag '62. (MIRA 16:4)
(Interferometry)

BATARCHUKOVA, N.R.; KIRICHENKO, A.P.

Fabry and Perot-type interference monochromator with a spherical calibration. Izm.tekh. no.8:11-13 Ag '62. (MIRA 16:4)
(Monochromator)

KIRICHENKO, A.P.

Construction of Fabry-Perot standards with spherical mirrors. (MIRA 16:2)
Izm.tekh. no.1:18-20 Ja '63.
(Optical instruments)

BATARCHUKOVA, N.R.; KARTASHEV, A.I.; KIRICHENKO, A.P.

A method for obtaining coherent radiation in the event of resonance absorption. Trudy Inst.Kom.stand., mer i izm.prib. no.56:5-10 '61. (MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I.Mendeleyeva.
(Standards of length) (Absorption spectra)

KIRICHENKO, A. P.

Methods for reducing spectral line widths to facilitate interference length measurements. Usp. fiz. nauk 78 no.3:525-538 N '62. (MIRA 16:1)

(Standards of length) (Interferometry)
(Spectrum analysis)

BATARCHUKOVA, N.R.; KARTASHEV, A.I.; KIRICHENKO, A.P.

Method of obtaining interference patterns at a large phase difference. Opt. i spektr. 14 no.2:304-305 F '63. (MIRA 16:5)
(Interference (Light)) (Optical measurements)

KIRICHENKO A.P., inzh.; LYASHCHENKO, E.I., inzh.; PANCHENKO, V.A., inzh.

Incompletely reversible electrohydraulic drive. Mekh. i avtom.proizv. 17 no.10:34-35 O '63. (MIRA 17:1)

KIRICHENKO, A.S., inzh.

Investigating the effect of automatic grain ejection from furrow openers of seeders on the performance. Trakt. i sel'-khozmash. no.2:17-19 F '59. (MIRA 12:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva.
(Agricultural machinery)

KOSTIN, S.A., inzh.; KIRICHENKO, A.V., inzh.

Design of a continuous-action filter press for dewatering coagulated middlings and flotation products. Nauch. trudy KuzNIIUgleobog. no.1:46-52 '62. (MIRA 16:8)

(Filter presses)

KOSTIN, S.A., inzh.; KIRICHENKO, A.V., inzh.; KAZAKOV, A.T., inzh.

Laboratory studies of using compressed air in dewatering coal middlings which have already been coagulated. Nauch. trudy KuzNIIUgleobog. no.1:33-45 '62. (MIRA 16:8)
(Filters and filtration)

ACC NR: AP7011368 SOURCE CODE: UR/0118/66/000/010/0031/0035

AUTHOR: Krasik, Ya. L. (Engineer); Rappoport, L. I. (Engineer); Lagunovich, Ye. F. (Engineer); Kirichenko, B. M. (Engineer)

ORG: none

TITLE: Sparkless transistorized logic elements for coal mines

SOURCE: Mekhanizatsiya i avtomatizatsiya proizvodstva, no. 10, 1966, 31-35

TOPIC TAGS: logic element, mining machinery, industrial automation

SUB CODE: 13,09

ABSTRACT: The use of electromagnetic relays as commutating elements in automatic control equipment in coal mines has several drawbacks: low reliability in conditions of dust and high humidity, great danger of sparking from the equipment, high cost due to wear on certain parts. These drawbacks can be avoided by replacing the electromagnetic relays with contactless commutating logic elements, which can be in the form of semi-conductors, ferrites, square hysteresis loops, etc. Tests have shown that the AND-OR, MEMORY, and TIME logic elements possess the greatest capacity with the least danger of sparking. The AND-OR element consists of a diode-rheostat circuit. The number of inputs

Card 1/2 UDC: 621.382.3;622.25

0931 1736

ACC NR: AP7011368

can be increased by joining the elements without changing the structure of the circuit. The MEMORY element consists of a static transistor trigger. It has a high static and dynamic reliability during large fluctuations of temperature. The TIME element is design to maintain the incoming signals for a given period of time. The basic component is an integrating RC circuit included in feed-back circuit with a "binistor" (a circuit having the negative part of the volt-ampere curve) at its output. These logic elements have been tested and found to operate satisfactorily in temperatures ranging from -40° to +60°C. Orig. art. has: 6 figures and 1 table. [JPRS: 40,352]

Card 2/2

KIRICHENKO, D.F.

Changes in the nervous system in typhoid fever. Vrach. delo no. 3:76-80 Mr '61. (MIRA 14:4)

1. Kafedra infektsionnykh bolezney (zav. - prof. B.Ya. Padalka), kafedra nervnykh bolezney (zav. - deystvitel'nyy chlen AMN SSSR, prof. B.N. Man'kovskiy) Kiyevskogo meditsinskogo instituta.
(NERVOUS SYSTEM—DISEASES) (TYPHOID FEVER)

UGRYUMOV, B. L., doktor med. nauk; VERZHKHOVSKAYA, A. A., kand. med. nauk; KIRICHENKO, D. F. (Kiyev)

Side effects of hormone therapy in infectious hepatitis. Vrach. delo no.3:112-117 Mr '62. (MIRA 15:7)

1. Institut infektsionnykh bolezney AMN SSSR.

(HEPATITIS, INFECTIOUS) (HORMONE THERAPY)

KOSTIN, S.A., inzh.; KAZAKOV, A.T., inzh.; KIRICHENKO, D.I., inzh.

Using polyacrylamide in laboratory and industrial studies on settling sludge and clarifying backwater at the Kirov preparation plant. Nauch. trudy KuzNIIUgleobog. no.1:62-72 '62. (MIRA 16:8)
(Kuznetsk Basin--Coal preparation) (Acrylamide)

KIRICHENKO, D.V.; MASLENNIKOV, N.D.; VESELYANSKIY, Yu.S.; GOLIK, V.P.

Studying the mineralogical composition of the finely divided fraction of Peskovka deposit clay. Sbor.trud. UNIIM no.11:244-249 '65. (MIRA 18:11)

Name: KIRICHENKO, E. A.

Dissertation: Study of high molecular silicon organic compounds by infrared absorption spectroscopy

Degree: Cand Chem Sci

Affiliation: Min Higher Education USSR, Moscow Order of Lenin Chemicotechnological Inst imeni D. I. Mendeleyev, Chair of Analytical Chemistry

Defense Date, Place: 1956, Moscow

Source: Knizhnaya Letopis', No 51, 1956

KIRICHENKO E.A.

AUTHORS: Kreshkov, A.P., Mikhaylenko, Yu.Ya., Kirichenko,E.A. 76-12-13/27

TITLE: Investigation on Highly Molecular Silicon-Organic Compounds According to the Method of Infrared Spectroscopy (Issledovaniye vysokomolekulyarnykh kremniyorganicheskikh soyedineniy metodom infrakrasnoy spektroskopii).

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1957, Vol. 31, Nr 12, pp.2690-2696 (USSR)

ABSTRACT: Infrared absorption spectra of aniline formaldehyde-resin and of highly molecular silicon-organic compounds, which were obtained on the basis of the interaction of original products with the condensation of aniline and formaldehyde with trimethylchlorsilane and dimethyldichlorosilane, as well as of the original products with the condensation of glycerine and pathalanhydride with diphenyl-silandiol, trimethylchlorosilane, dimethyldichlorosilane and tetraethoxysilane are investigated here for the first time. It was stated that between the molecules of the aniline-formaldehyde-resin and the molecules of dimethyldichlorosilane and of the trimethylchlorosilane, as well as between the molecules of glyphthal-resin and the molecules of diphenylsilandiol, trimethylchlorosilane, dimethylchlorosilane and tetraethoxysilane a chemical process takes place. This process is caused by the interaction of hydroxyl-groups of highly molecular

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Investigation on Highly Molecular Silicon-Organic Compounds According to the Method of Infrared Spectroscopy 76-12-13/27

organic compounds with active atoms or functional groups of silicon-organic original compounds. There are 15 figures, and 17 references, 6 of which are Slavic.

ASSOCIATION: Chemical-Technological Institute imeni D.I. Mendeleyev, Moscow (Khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva, Moskva).

SUBMITTED: October 7, 1956

AVAILABLE: Library of Congress

Card 2/2

KIRICHENKO, E.A.

AUTHORS: Kreshkov, A. P., Mikhaylenko, Yu. Ya., Kirichenko, E. A. 75-1-22/26

TITLE: The Analysis of Silicon Organic Compounds of High Molecular Weight by Infrared Spectroscopy (Analiz vysokomolekulyarnykh kremniyorganicheskikh soyedineniy metodom infrakrasnoy spektroskopii)

PERIODICAL: Zhurnal Analiticheskoy Khimii, 1958, Vol 13, Nr 1, pp 127-133 (USSR)

ABSTRACT: All hitherto known methods of investigating organosilicon compounds by means of infrared spectroscopy are based on the investigation of the infrared spectra of individual substances, where the absorption maxima found characterize certain chemical linkages and groupings of atoms in the molecules of the investigated compound. In an earlier paper the authors reported on the application of infrared absorption spectroscopy for the analysis of monomeric organosilicon compounds. The present article is devoted to the analysis of compounds of high molecular weight which are produced by the union of organosilicon compounds with polymeric organic compounds containing free hydro-

Card 1/4

xyl groups in their molecules. Substances were investigated which are obtained by a reaction between condensation products of glycerin and phthalic anhydride or of aniline and formaldehyde on the one hand and trimethylchlorosilane, dimethylchlorosilane and tetraethoxysilane on the other. In this connection it became evident that the chemical analysis according to the method by Verley causes a decrease in the number of free hydroxyl groups in the end products in comparison with any initial products containing hydroxyl groups. The silicon content of the end products was photocolometrically determined. It was found that by the method of infrared spectroscopy a number of analytic signs can be found which permit the determination of certain atom groupings and chemical bonds in the molecules of organosilicon compounds. Thus the structure of the obtained end products can also be determined and the character of the modification brought about by the chemical reaction can be judged. The corresponding measurements were performed in a spectrophotometer of the type ИКС-11. It was found that the absorption bands at 3 μ(3333 cm^{-1}) can serve as a reliable criterion for the qualitative and quantitative determination

of hydroxyl groups in organosilicon compounds which do not contain any N-H bonds. When N-H bonds are contained in the compound to be investigated, their corresponding bands overlap at 3,00 μ (3333 cm^{-1}) with the band caused by the O-H bond. In such cases the determination of the hydroxyl groups according to this method is not possible. In all cases in which alkyl chlorosilane is taken as initial product a new absorption band at 9,5 - 9,6 μ (1050 - 1040 cm^{-1}) was found in the spectra of the end products which is absent in the initial products. The presence of this band can only be explained by the formation of a new atom grouping Si-O which shows in the result of the following chemical process:

$$R_kOH + ClSi(CH_3)_3 \xrightarrow{-HCl} R_k\text{-}OSi(CH_3)_3$$

R_k signifies a complicated organic radical. As the formation of the atom grouping Si-O is always accompanied by the formation of the absorption band at 9,5 - 9,6 μ in the spectrum, this band can serve as a criterion for the presence of the Si-O bond in complicated organosilicon compounds.

The Analysis of Silicon Organic Compounds of High Molecular Weight by Infrared Spectroscopy 75-1-22/26

The spectrophotometer used for taking the infrared spectra is exactly described and the performance of the investigations as well. There are 3 figures, 9 tables, and 16 references, 7 of which are Slavic

ASSOCIATION: Moscow Chemical and Technological Institute imeni, D.I. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut im. D.I.Mendeleyeva)

SUBMITTED: October 12, 1956

AVAILABLE: Library of Congress

1. Silicon compounds (Organic) - Infrared spectroscopy
2. Infrared spectroscopy - Applications

Card 4/4

5.3830

AUTHORS: Kirichenko, E. A., Andreyev, P. A.

S/153/60/003/01/023/058
B011/B005

TITLE: Quantitative Determination of OH Groups in Cellulose Nitrates and in Products of Their Combination With Organosilicon Compounds by the Method of Infrared Spectra

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1960, Vol 3, Nr 1, pp 88-91 (USSR)

TEXT: The authors developed methods for a direct quantitative determination of OH groups in cellulose nitrates and their reaction products with organosilicon compounds. The results prove a chemical interaction of dimethyldimethoxysilane with non-esterified OH groups of cellulose nitrates. During investigations carried out by the authors (Refs 1,2) it became necessary to determine the OH groups qualitatively and quantitatively. No reliable method had been published hitherto. The authors used the method of molecular absorption spectroscopy in the infrared section of the spectrum. This method is known from publications as "method of the graduation curve" (Refs 7,8). The spectra were recorded on an IKS-11 spectrophotometer with a NaCl lens. The samples consisted either of a film 19-20μ thick, or of a suspension in chemically pure vaseline oil. The absorption maximum at 2.9μ was measured. The graduation curve (Fig 1) was

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Quantitative Determination of OH Groups in Cellulose Nitrates and in Products of Their Combination With Organosilicon Compounds by the Method of Infrared Spectra

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B011/B005

determined on the basis of infrared spectra of 5 cellulose-nitrate samples. The content of Oh groups was calculated from the content of nitro groups (Lunge's method). Table 1 shows the results. Table 2 indicates the permeability at 2.9μ of the reaction products of the cellulose-nitrate samples with dimethyldimethoxysilane as well as the content of OH groups. The OH content was determined on the basis of the graduation curve (Fig 1) and the values mentioned at last. The graduation curve was also used for determining OH groups of the newly formed products. Table 3 shows that here the relative content of OH groups per 1 elementary member of the macromolecule is slightly lower than in the nitrates used. The molecular weight of the interaction products is slightly higher than that of the pure nitrates. The authors introduced correction coefficients to compensate for the too low content of OH groups (Table 3). These coefficients lie between 1.03 and 1.2 according to the content of nonsubstituted OH groups in the cellulose nitrate used. Table 4 shows the accurate data after introduction of the said coefficients. A comparison of tables 1 and 4 shows that the content of free OH groups decreases considerably in the reaction products of

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Quantitative Determination of OH Groups in Cellulose Nitrates and in Products of Their Combination With Organosilicon Compounds by the Method of Infrared Spectra

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cellulose nitrates with dimethyldimethoxysilane as compared with the nitrates used. Therefore, it can be stated that the interaction under review is a chemical process caused by the reaction of the free, non-esterified OH groups of cellulose nitrate. Figure 2 shows the graduation curve drawn on the basis of the data determined (Tables 2 and 4). It permits a direct determination of OH groups in the reaction products mentioned on the basis of light absorption. There are 2 figures, 4 tables, and 12 references, 5 of which are Soviet.

ASSOCIATION: Kazakhskiy tekhnologicheskiy institut; Kafedra obshchey khimii (Kazakh Technological Institute; Chair of General Chemistry)

SUBMITTED: February 6, 1959

Card 3/3

KIRICHENKO, P. G.

PA 43/4975

USSR/Agriculture
Plant Breeding

Jul/Aug 48

"Tree Interspecies Crossbreeding of Winter Wheat," P. G. Kirichenko, Genet Agr Sci, All-Union Agr Genetic Inst, Odessa, 9 pp

"Agrobiologiya" No 4

First- and second-generation hybrid winter wheat, obtained by liberal cross pollination of several types of Ukrainian wheat, had many advantages over the parent wheat. Studies conducted on first- and second-generation interspecies hybrids showed that were more fertile and more frost-resistant than the parent wheat.

43/4975

30870. KIRICHENKO, F. G.

Selektsiya i semenovodstvo ozimoy pshchenitsy. V sb: Nauch. trudy Vsesoyuz. selekts.-genet. in-ta im. Lysenko. M., 1949, s. 5-43.

30874. KIRICHENKO, F. G. AND SHUMAKOVA, YE. M.

Selektsiya i semenovodstvo yarovoy pshenitsy. V sb: Nauch. trudy Vsesoyoz. selekts.-genet. in-ta im. Lysenko. M., 1949, s. 44-67.

KIRICHENKO, F. G.

21852 OL'SHANSKIY, N. A.; KIRICHENKO, F. G.; I BARSHITSK, Ye. T.

O matodakh vyrashchivaniya porodno uluchennykh semyan elity. Selektsiya i semenovodstvo, 1949, No. 7, s. 27-35.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949

KIRICHENKO, F. G.

Wheat

Inter-variety hybridization of winter wheat; Dokl. Ak. sel'khoz. 16 no. 11, 1951

Monthly List of Russian Accessions, Library of Congress, May 1952. UNCLASSIFIED.

1. KIRICHENKO, F. G. ; IL'ICHYEVA, M. V. ; VISHNEVSKIY, V. V.

2. USSR (600)

3. Wheat - Ukraine

4. Selection of wheat varieties for irrigation conditions in the southern Ukraine. Sel. i sem. 20 No. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

KIRICHENKO, F. G.

SPIVAK, M.S., glavnyy redaktor; BELOZUB, V.G., redaktor; VASILENKO, P.M., redaktor; ZORIN, I.G., redaktor; IL'CHENKO, I.K., redaktor; KOVAL', A.G., redaktor; KRYLOV, A.F., redaktor; PUKHAL'SKIY, A.V., redaktor; SIDORENKO, A.P., redaktor; FADCHENKO, A.N., redaktor; ANGELINA, P.N., redaktor; BUZANOV, I.F., redaktor; BOYKO, D.V., redaktor; BURKATSKAYA, G.Ye., redaktor; VASILENKO, A.A., redaktor; VLASYUK, P.A., redaktor; GORODNIY, N.G., redaktor; DEMIDENKO, T.T., redaktor; DUBKOVETSKIY, F.I., redaktor; KIRICHENKO, F.G., redaktor; LITOVCHENKO, G.P., redaktor; OZERNYY, M.Ye., redaktor; PERSHIN, P.N., redaktor; POPOV, F.A., redaktor; POSMITNYY, M.A., redaktor; PSHENICHNYY, P.D., redaktor; RADCHENKO, B.P., redaktor; ROMANENKO, I.N., redaktor; RUBIN, S.S., redaktor; SAVCHENKO, M.Kh., redaktor; SOKOLOVSKIY, A.N., redaktor; TSYBENKO, K.Ye., redaktor; KOVAL'SKIY, V.F., tekhnicheskiy redaktor

[Practical collective farm encyclopedia] Kolkhoznaia proizvodstvennaia entsiklopediia. Izd.2-oe, ispr. i dop. Kiev, Gos.izd-vo sel'khoz. lit-ry USSR. Vol.1. Abrikos - liutserna. 1956. 688 p. (MLRA 10:9)
(Agriculture--Dictionaries)

SPIVAK, M.S., golovnyy redaktor; BILOZUB, V.G., redaktor; VASILENKO, P.M., redaktor; ZORIN, I.O., redaktor; IL'CHENKO, I.K., redaktor; KOVAL', O.G., redaktor; KRILOV, O.F., redaktor; PUKHAL'S'KIY, A.V., redaktor; SIDORENKO, O.P., redaktor; FEDCHENKO, O.N., redaktor; ANGELINA, P.M., redaktor; BUZANOV, I.F., redaktor; BOYKO, D.V., redaktor; BURKATS'KA, O.E., redaktor; VASILENKO, A.O., redaktor; VLASYUK, P.A., redaktor; GORODNIY, M.G., redaktor; DEMIDENKO, T.T., redaktor; DUBKOVETS'KIY, F.I., redaktor; KIRICHENKO, F.G., redaktor; LITOVCHENKO, G.P., redaktor; OZERNIY, M.O., redaktor; PERSHIN,P.M., redaktor; POPOV, F.A., redaktor; POSMITNIY, M.O., redaktor; PSHENICHNIY, P.D., redaktor; RADCHENKO, B.P., redaktor; POMANENKO, S.S., redaktor; RUBIN, S.S., redaktor; SAVCHENKO, M.Kh., redaktor; SOKOLOVS'KIY, O.N., redaktor; TSIBENKO, K.O., redaktor; SHCHERBINA, O.P., redaktor; KRAVCHENKO, M.F., tekhnichniy redaktor

[Collective farm encyclopedia] Kolhospna vyrobnycha ensyklopediia. Vyd. 2-e, perer. i dop. Kyiv, Derzh.vyd-vo sil's'kohospodars'koi lit-ry URSR. Vol.1. Abrykos - Liutserna. 1956. 756 p. (MIRA 9:9)
(Agriculture--Encyclopedias and dictionaries)

KIRICHENKO, F.G.

USSR/Cultivable Plants - Grains. M-2

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10675

Author : Kirichenko, F.G.

Inst : Selection-Genetics Institute imeni Lysenko (Odessa)

Title : The Results of Work on Selection of Grain Crops.

Orig Pub : Selektsiya i semenovodstvo, 1956, No 5, 3-8

Abstract : The results of grain crop selection in the Selection-Genetics Institute imeni Lysenko (Odessa) are given. There is a description of winter wheat and winter barley varieties and of the methods used to develop them.

Card 1/1

Country : USSR
CATEGORY : CULTIVATED PLANTS. Grains. Leguminous Grains. Tropical Cereals. M
ABS. JOUR. : RZhBiol., No. 1 1959, No. 1583
AUTHOR : Mirchenko, F. M.
INST. : All-Union Selection-Genetic Inst.
TITLE : The Application of Hybridization in the Seed Raising of Winter Wheat.
ORIG. PUB. : Byul. Vses. selekts.-genet. in-ta, 1957, No. 3, 3-6
ABSTRACT : In tests made on the intervarietal crossing of the winter wheat varieties Odesskaya 3, Odesskaya 12, Ukrainka and Poltavka 30, an increase was noted in the productivity of the hybrids. The author suggests highly productive winter wheat plants be bred by selecting the most suitable varieties. -- Ya. Kreyevoy

CARD: 1/1

Country : USSR
CATEGORY : CULTIVATED PLANTS. Grains. Leguminous Grains. Tropical Cereals.
Abs. Jour. : Zoobiol., No. 1 [illegible], No. 1562

Author : Kirichenko, F.G.
Inst. : Kuybyshev Univ.; Odessa All-Union Selection-*
Title : Methods and Results of Studies in the Selection of Winter Wheat.

Orig. Pub. : V sb.: Vopr. metodiki selektsii pshenitsy i kukuruzy. Khar'kov, Un-t, 1957, 11-21

Abstract : In breeding work on winter wheat made at Odessa All-Union Selection-Genetic Institute the parent stock was comprised of hybrids from intervarietal crossing of the selected varieties through both free and artificial pollination, and individual selections of plants and seeds in seed nurseries among the existent districted varieties. With careful study being made of the economic-biological features of the hybrid populations, an individual selection was undertaken in F_1, F_2 and

[illegible] : *Genetic Institute
1/2

[illegible] :
[illegible] : CULTIVATED PLANTS.

[illegible] : RZhBiol., No. 1 [illegible], No. 1382

[illegible] :
[illegible] :
[illegible] :

[illegible] :

[illegible] : F_3. The seeds then obtained were tried out in competitive tests, thus providing a basis for an evaluation of the particular hybrid population taken as a whole. --O.V. Yakushkina

CARD: 2/2

25

AGENCY : USSR
CATEGORY : Cultivated Plants. Grains. Leguminous Grains. Tropical Cereals.
ABS. JOUR : RZhBiol., No. 5, 1958, No. 20215

AUTHOR : Kirichenko, F.G.
INST. : Kharkov University
TITLE : Seed Management Methods for Winter Wheat.

ORIG. PUB.: V sb.: Vopr. metodiki selektsii pshenitsy i kukuruzy, Khar'kov, Un-t, 1957, 23-27

ABSTRACT : To speed up the reproduction of Odesskaya-3, Odesskaya-12, and Odesskaya-10, the All-Union Selection Genetic Institute has recommended the use of the best seeds irrespective of their reproductive powers in the regular kolkhozes by the wide-row method. In order to improve the best seeds by free intra-varietal crossing, in F_2 typical plants are selected to start the seed nursery, and in F_3 the stock which retained morphological and other matern-

CARD: 1/2

KIRICHENKO, F. G.

COUNTRY	:	USSR
CATEGORY	:	Cultivated Plants. M Grains. Legumes. Tropical Cereals.
ABS. JOUR.	:	RZhBiol., No. 3, 1959, No. 10830
AUTHOR	:	Kirichenko, F. G.
INST.	:	All-Union Academy of Agricultural Sciences imeni Lenin.
TITLE	:	Free Interbreeding Among Winter Wheat Varieties as a Method of Seed Growing.
ORIG. PUB.	:	Dokl. VASKhNIL, 1957, No. 10, 15-21.
ABSTRACT	:	From the hybrids secured in 1945 and 1948 in the inter-variety crossbreeding of winter wheat Odesskaya 3 and Odesskaya 12, there was made in the 1951 crop a thorough selection of plants typical of the maternal form and during 4 years there were made evaluations of their yielding ability in comparison with the maternal form. The intra-variety crossbreeding in the varieties Odesskaya 3 and Odesskaya 12 surpasses their yield by 1 centner/ha. The inter-variety crossbreeding with correctly selected paternal varieties gives an increase in the yield of up to 2 centners/ha and more. The grains from the free inter-

CARD: 1/2

COUNTRY :
CATEGORY :

ABS. JOUR. : Referat. Zh. Biol., No. 1959, No. 10830

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : variety crossbreeding retain the high milling and bread-baking qualities of the maternal form. An outline is given for growing the seeds of winter wheat with the utilization of inter-variety crossbreeding. -- O. V. Yakushkina

CARD: 2/2

COUNTRY	:	USSR
CATEGORY	:	Cultivated Plants. Cereals M
ABS. JOUR.	:	RZhBiol., No.23, 1958, No. 104604
AUTHOR	:	Kirichenko, F. G.
INST.	:	All-Union Breeding and Genetics Institute.
TITLE	:	Principle Results of the Work on the Creation of Hard Winter Wheat.
ORIG. PUB.	:	Selektsiya i semenovodstvo, 1958, No. 1, 21-28
ABSTRACT	:	Work on the creation of hard winter wheat for the conditions of the steppe areas of Ukraine, was started at the Wheat Breeding Section of the All-Union Breeding and Genetics Institute in 1945. By 1958, the Section had at its disposal a large amount of seeds of genuinely hard winter wheats obtained chiefly by repeated crossings. In resistance to cold, this material approaches the soft winter wheat variety Odesskaya 3. The original hybridization material are winter varieties of soft wheats - Odesskaya 3, Odesskaya 12, Voroshilovskaya, Koveyl, and spring varieties

Card: 1/2

KIRICHENKO, F.G., akademik

Developing new types and varieties of winter durum wheat. Dokl. Akad.sel'khoz. 24 no.1:6-12 '59. (MIRA 12:2)

1. Vsesoyuznyy selektsionno-geneticheskiy institut imeni T.D. Lysenko.
(Wheat breeding)

NASYPAYKO, Vasiliy Mitrofanovich; ISAROV, Yuriy Terent'yevich, kand. sel'khoz. nauk; KIRICHENKO, F.G., laureat Leninskoy premii; akademik; VINNITSKIY, S., red.; MOLCHANOVA, T., tekhn. red.

[Varieties and seeds; seed production of grain, pulse, and oleaginous crops in the southern Ukraine] Sort i semena; semenovodstvo zernovykh, zernobobovykh i maslichnykh kul'tur na iuge Ukrainy. Predisl. i obshchaia red. F.G.Kirichenko. Odessa, Odesskoe knizhnoe izd-vo, 1960. 243 p. (MIRA 14:7)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.Lenina i Ukrainskaya akademiya sel'skokhozyaystvennykh nauk (for Kirichenko)
(Ukraine--Seed production)

KIRICHENKO, F.G., akademik

Development of winter durum wheat and certain problems of grain breeding. Agrobiologiia no. 3:328-331 My-Je '60. (MIRA 13:12)

1. Vsesoyuznaya Akademiya sel'skokhozyaystvennykh nauk imeni Lenina.
(Wheat) (Grain breeding)

MUSIYKO, A.S., doktor sel'khoz. nauk, otv. red.; BERCHENKO, B.E., red., kand. sel'khoz. nauk; VENGRENOVSKIY, S.I., kand. sel'khoz. nauk, red.; VERESHCHAKA, A.I., kand. sel'khoz. nauk, red.; GARKAVYY, P.F., kand. sel'khoz. nauk, red.; DOLGUSHIN, D.A., akademik, red.; KIRICHENKO, F.G., akademik, red.; PUKHAL'SKIY, A.V., kand. sel'khoz. nauk, red.; SOKOLENKO, N.F., doktor sel'khoz. nauk, red.; KHITRINSKIY, V.F., doktor sel'khoz. nauk, red.; SMIRNOV, F.V., red.; TETYUREVA, I.V., red.; MAKHOVA, N.N., tekhn. red.

[Towards the development of Michurinist agrobiological theories] Za razvitie michurinskoi agrobiologicheskoi nauki; materialy... Moskva, Sel'khozizdat, 1963. 350 p. (MIRA 16:10)

1. Nauchnaya konferentsiya, posvyashchennaya 50-letiyu Vsesoyuznogo Ordena Lenina i Ordena Trudovogo Krasnogo Znameni selektsionno-geneticheskogo instituta imeni T.D. Lysenko. 2. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina, direktor Vsesoyuznogo selektsionno-geneticheskogo instituta imeni T.D.Lysenko (for Musiyko). 3. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.Lenina (for Kirichenko, Dolgushin). 4. Vsesoyuznyy selektsionno-geneticheskiy institut imeni T.D.Lysenko (for Kirichenko, Vengrenovskiy, Garkavyy). 5. Glavnyy uchenyy sekretar' prezidiuma Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina (for Pukhal'skiy).

(Plant breeding) (Plants, Cultivated)

KIRICHENKO, F.G., akademik

Effect of free intervarietal crossing of winter wheat and pollination with foreign pollen on the increase of vitality, winter hardiness and productivity in the progeny. Agrobiologiia no.4:492-498 Jl-Ag '64. (MIRA 17:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy selektsionno-geneticheskiy institut, g. Odessa.

KIRICHENKO, F.N.

Method of filtration of preserving and plasma substituting solutions. Prob. gemat. i perel. krovi 9 no.12:55 D '64
(MIRA 18:1)

1. 1-ya Leningradskaya gorodskaya stantsiya perelivaniya krovi (direktor A.I. Yuchenkova).

GRISHKO, M.D.; KIRICHENKO, F.P.

New cherry varieties in Rostov Province. Kons. i ov. prom. 14 no.1:32-33 Ja '59. (MIRA 12:1)

1.Batayskiy opornyy punkt.
(Rostov Province--Cherry--Varieties)

KIRICHENKO, F. S.

BOL'SHAKOV, F. D.; VOLZHENSKIY, YE. V; ALYBINA, S. D. ; SOKOLOV, V. G.; KIRICHENKO, F. S.

Surgeons

In memory of V. K. Fyalkov, Khirurgiia No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1952. UNCLASSIFIED.

KIRICHENKO, G. A.

21914. KIRICHENKO, G. A.
lebedinskiy krupnyy rogatyy skot. Sots. zhivotnovodstvo,1949, NO.2,s. 56-65

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949.

C.A. KIRICHENKO, G.A. 1a

Use of sea water for washing salt fish and the preparation of brines. G. A. Kirichenko. *Rybnoe Khozyaistvo* 27, No. 1, 21-2(1931).—Tests of the comparative value of sea water and brine made with fresh water for washing and steaming fish are reported. Regardless of the time of the year, salted fish for packing can be washed in sea water followed by steeping in a brine of not less than 20° Bé. For highly and medium salted fish the fixing in brine can be omitted provided the surrounding temp. does not exceed +7°. Salted herring packed in brine should be washed in sea water and then packed in a brine of not less than 20° Bé. No difference was observed between brines prepd. from sea and from fresh water. M. Hosch

DAVIDSON, A.G.; DATLIN, S.V.; KIRICHENKO, G.A.; KOROTKOVA, Ye.N.; KRAVCHENKO, D.V.; ORLOVA, A.S.; ADADUROVA, A.A.; ARKAD'YEV, V.G.; BARDINA, Yu.Ya.; BODYANSKIY, V.L.; BONDAREV, S.N.; GLAZACHEV, M.V.; DAVYDOVA, E.A.; IVANOV, V.N.; KARPUSHINA, V.Ya.; KREKOTEN', L.P.; LANDA, R.G.; LEVITSKAYA, G.O.; LIPETS, Yu.G.; LOGINOVA, V.P.; ONAN, E.S.; PEGUSHEV, A.M.; PYKHTUNOV, N.V.; TOKAREVA, Z.I.; KHUDOLEY, V.F.; MILOVANOV, I.V., red.; MIKAELYAN, E., red.; MUKHIN, R., red.; SVANIDZE, K., red.; KLIMOVA, T., tekhn. red.

[Africa today; concise reference book on politics and economic conditions] Afrika segodnia; kratkii politiko-ekonomicheskii spravochnik. Moskva, Gos. izd-vo polit. lit-ry, 1962. 326 p.
(Africa--Politics)
(Africa--Economic conditions)

GONCHAROV, Leongard Vasil'yevich; KIRICHENKO, Galina Abramovna;
TRET'YAKOV, P.N., otv. red.; PAVLOV, A.G., red.;
YAZLOVSKAYA, E.Sh., tekhn. red.

[The "Common Market" and African countries] "Obshchii rynok"
i strany Afriki. Moskva, Izd-vo vostochnoi lit-ry, 1963. 70 p.
(MIRA 16:4)
(European Economic Community countries--Foreign economic relations--
Africa)
(Africa--Foreign economic relations--European Economic Community
countries)

KIRICHENKO, G.A., kand.ekonom.nauk; KOROTKOVA, Ye.N.

"The raw material resources of Africa, 1913-1958" by A.IU.Shpirt. Reviewed by G.A.Kirichenko, E.N.Korotkova. Vest.AN SSSR 33 no.2:134-136 F '63. (MIRA 16:2)
(Africa—Raw materials)
(Shpirt, A.IU.)

KIRICHENKO, G.I.

25416 Kirichenko, G.I. Vozrast i Ploshchad' Rasprostraneniya Zhelezo-Rudnogo Basseyna v Eniseyskom Kryazhe. Sov. Geologiya, No. 32, 1948, s 26-28

SO: Letopis' Zhurnal Statey, No. 30, Moscow, 1948

KIRICHENKO, G.I.

New data on the geology of the Yenisey Ridge; based on the 1954 activities of the Sayan-Yenisey Expedition of the All-Union Geological Institute. Inform.sbor. VSEGEI no.1:52-61 '55.
(MIRA 9:12)

(Yenisey Ridge--Geology, Stratigraphic)

KIRICHENKO, G.I.

The upper Proterozoic of the western margin of the Siberian Platform. Mat. VSEGEI no.7:5-28 '55. (MLRA 10:4)
(Siberian Platform--Geology, Stratigraphic)

KIRICHENKO, G.I.; GUR'YANOVA, V.N.

Stratigraphy and lithology of terrigenous deposits of the lower Cambrian in the Iya and Uda Valleys in the northern piedmont of the Eastern Sayan Mountains. Mat. VSEGEI no.7:41-49 '55.
(Iya Valley--Geology, Stratigraphic) (MLRA 10:4)
(Uda Valley--Geology, Stratigraphic)

KIRICHENKO, G.I.; TUGANOVA, Ye.V.

Age and composition of "pebble beds" in the southern Siberian Platform. Mat. VSEGEI no.7:148-158 '55. (MLRA 10:4)
(Siberian Platform--Pebbles)

KIRICHENKO, G.I.

Tectonic structure of the Yenisey Ridge and its relation to the general structure of the region. Inform. sbor. VSEGEI no.4:45-52 '56. (MLRA 10:4)

(Yenisey Ridge--Geology, Structural)

KIRICHENKO G.I.

ALYUSHINSKIY, Yu.A.; KIRICHENKO, G.I.; TIMOFEYEV, B.V.

Spores from Sinian deposits found in the Yenisey Ridge. Dokl. AN SSSR 117 no.1:111-114 N-D '57. (MIRA 11:3)

1. Predstavleno akademikom D.V.Nalivkinym.
(Yenisey Ridge--Pollen, Fossil)

KIRICHENKO, G.I.; KLYUSHINSKIY, Yu.A.

Spores from Sinian and Cambrian sediments in the Yenisey Ridge.
Trudy VSEGEI 66:43-54 '61. (MIRA 15:4)
(Yenisey Ridge--Spores (Botany), Fossil)

KIRICHENKO, G.I.

Algae Conophyton Masl. Trudy VSEGEI 66:55-69 '61. (MIRA 15:4)
(Siberian Platform--Algae, Fossil)

SALOP, Lazar' Iosifovich; KIRICHENKO, G.I., red.

[Geology of the Baikal mountain region] Geologiia Baikal'-skoi gornoi oblasti. Moskva, Izd-vo "Nedra." Vol.1. [Stratigraphy] Stratigrafiia. 1964. 515 p. (MIRA 17:7)

KIRICHENKO, G.I.

On some of A.G. Vologdin's works. Sov. geol. 7 no.6:150-152 Je '64 (MIRA 18:1)

23342 S/058/61/000/006/028/063
A001/A101

24,3600 (1035, 1144, 1482)

AUTHOR: Kirichenko, O.T.

TITLE: The photoelectric effect in liquids

PERIODICAL: Referativnyy zhurnal. Fizika, no. 6, 1961, 222, abstract 6D58 ("Tr. Dnepropetr. s.-kh. in-ta", 1960, v. 8, 83 - 85)

TEXT: The author measured the change in dielectric constant ε of the bromoform solution in transformer oil as a result of irradiation by light in the visible and infrared regions of spectrum (photoelectric effect). The ε-value was determined by measuring the capacitance of a capacitor immersed in the solution. The measurements were conducted at a frequency of 500 kc. At the maximum intensity of illumination the value of ε changed by up to 8.6%. The photodielectric effect arises almost instantaneously; it is reversible. When the solution is illuminated during 40 sec, relaxation time amounts to 5 ÷ 6 sec.

O. Shustova

[Abstracter's note: Complete translation]

Card 1/1

LAVRINENKO, V.F., kand. tekhn. nauk; IVANOV, Yu.A., inzh.; KIRICHENKO, G.S., inzh.; MUNTYAN, I.S., inzh.

Changes in mining conditions with an increased working depth. Met. i gornorud. prom. no.6:35-39 N-D '62. (MIRA 17:8)

1. Krivorozhskiy gornorudnyy institut.

.7216

S/057/62/032/011/008/014
B104/B102

17

AUTHORS: Gabovich, M. D., and Kirichenko, G. S.

TITLE: The oscillation of ions in the region of the potential minimum and the low frequency oscillations in a gas discharge

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 11, 1962, 1376-1381

TEXT: The oscillation properties of a vacuum diode having very low cesium vapor pressure and those of a mercury vapor diode, are investigated using an experimental arrangement as shown in Fig. 1. The positive ions of cesium produced by thermal ionization move to and fro between the cathode and a point of reversal which depends on the anode potential. If the potential minimum ($eV_m \gg kT$) is deep, the motion of the ion is determined not by its thermal velocity but by the electric field. The frequency of oscillations is calculated for pressure so low that the space charge of the cesium ions does not affect the motion of the ions. Application of Langmuir's relations (Phys. Rev., 21, 419, 1923) to the dimensions of the potential well leads to the following formula for the frequency of

Card 1/4

The oscillation of ions in the ...

the flight ion oscillations:

$$f=\frac{\pi^{1/2}}{2^{1/2}}\frac{\eta^{1/2}}{\xi_{-}+\xi_{+}}\frac{m^{1/2}e^{1/2}}{M^{1/2}(kT)^{1/2}}j^{1/2}.$$

Here η, ξ_+ and ξ_- are dimensionless parameters tabulated by Langmuir, m is the electron mass, M the ion mass, and j the density of the electron current. The frequency is found to be proportional to $j^{1/2}$ (Fig. 2). The oscillations are independent of the parameters of the external current circuit, are sinusoidal, and have constant frequency and amplitude modulation. The excitation of the oscillations is explained as follows: In the region of the potential well an oscillating electric field exists which modulates the ion velocity and consequently the ion current. This causes the depth of the potential well to pulsate and the anode current to oscillate. If the cathode is incandescent, have to traverse a double layer the positive ions in the plasma of a gas discharge to reach it. This double layer lies near the cathode. Inside the double layer there exists a potential minimum, the depth and dimensions of which can be

Card 2/4

The oscillation of ions in the ...

determined from the anode current and the saturation current of the cathode in the same way as for the vacuum diode provided that the positive space charge is negligible. The flight-oscillations of the positive ions that occur under these conditions are the main cause of low frequency oscillations appearing in discharges with incandescent cathodes. There are 6 figures.

ASSOCIATION: Institut fiziki AN USSR, Kiyev (Institute of Physics AS UkrSSR, Kiyev)

SUBMITTED: October 5, 1961

Fig. 1. Block scheme. Legend: (1) commutator of the filament current, (2) electronic commutator, (3) superheterodyne, (4) oscillograph, (5) ЭНО-1 (ENO-1) oscillograph, (6) broad band amplifier, (7) cathode follower, (8) ОК-17 (OK-17) oscillograph, (9) amplifier.

Fig. 2. Dependence of the frequency on $\sqrt{j}$ for different filament currents. Legend: (1) 13.0 a, (2) 12.2 a, (3) 12.0 a, (4) 11.25 a.

38858

S/056/62/042/006/010/047
B104/B102

24.2531
24.2312

AUTHORS: Gabovich, M. D., Kirichenko, G. S.

17

TITLE: The excitation of oscillations on the passage of a beam of slow ions through a plasma

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 6, 1962, 1478 - 1480

TEXT: A discharge was produced in cesium vapor ($\sim 10^{-3}$ mm Hg) between the cathode and the anode (Fig. 1). The plasma of this discharge penetrated the side branch with probes, $З_2$, $З_1$, and З. The probes $З_1$ and $З_2$ are placed at distances of 9 and 15 mm from the probe З. A positive potential relative to the plasma was applied to З. At high temperatures of З, cesium ions were produced by surface ionization. Owing to the potential difference these ions fell into the plasma as a straight line beam. In agreement with the theory, low frequency oscillations were excited on the passage of slow ions through the plasma. The low frequency oscillations made their appearance at those temperatures of З at which cesium ions were produced. The frequency of the oscillations lies in the region of the

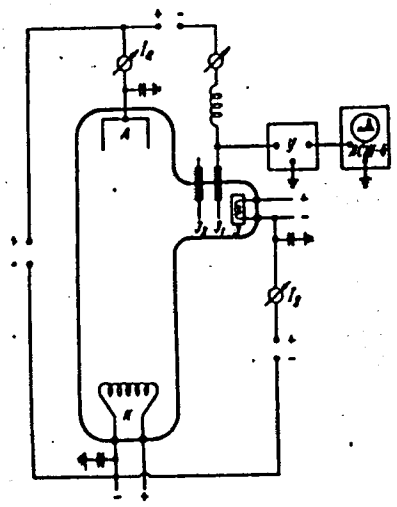
Card 1/2

The excitation of oscillations...

Langmuir ion frequency and increases with the rise in temperature of 3. The oscillations discovered have no relationship with the (low-frequency) anode oscillations. There are 2 figures.

SUBMITTED: January 30, 1962

Fig. 1. Special discharge tube.



Card 2/2

ACCESSION NR: AT4025320 S/0000/63/000/000/0283/0291

AUTHORS: Gabovich, M. D.; Kirichenko, G. S.; Koydan, V. S.

TITLE: Excitation of plasma oscillations by an ion beam, and the possibility of determining the electron temperature

SOURCE: Diagnostika plazmy* (Plasma diagnostics); sb. statey. Moscow, Gosatomizdat, 1963, 283-291

TOPIC TAGS: plasma oscillation, ion beam, plasma ion oscillation, plasma electron temperature, plasma interaction, drift, standing wave

ABSTRACT: Continuing their earlier investigations ("Zh. eksperim. i teor. fiz." v. 42, 1478, 1962; Ukr. fiz. zh., in press), the authors describe apparatus aimed at checking the influence of electron drift in a direction opposite to the ion beam on the stability of the oscillations produced when an ion beam passes through a plas-

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ma. The apparatus and its operation are briefly described. It is reported that, unlike the earlier experiments, oscillations with noticeable amplitude were excited also in the absence of drift current. The properties of these oscillations are described briefly. In the presence of backward drift, a new type of more intense oscillation with a rather narrow frequency spectrum was also observed. It is concluded that the backward electron drift leads to establishment of a standing wave, to a considerable increase in the oscillations, and to a narrowing down of the frequency range. The ion threshold energy at which the excitation of these oscillations terminates is proportional to the electron temperature. This is in qualitative agreement with the theory and gives grounds for assuming that a new method will be developed for determining electron temperature. It is proposed in the future to broaden the range of electron temperatures of the investigated plasmas and also to carry out a rigorous quantitative determination of the threshold energy. Orig. art. has: 7 figures.

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ASSOCIATION: None

SUBMITTED: 19Oct63	DATE ACQ: 16Apr64	ENCL: 00
SUB CODE: ME	NR REF SOV: 003	OTHER: 000

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S/109/63/008/003/022/027
D271/D308

AUTHORS: Gabovich, M. D., and Kirichenko, G. S.

TITLE: Microwave generation by electrons oscillating in the potential well formed by positive space charge

PERIODICAL: Radiotekhnika i elektronika, v. 8, no. 3, 1963, 520-522

TEXT: A microwave generator is discussed, which consists of a diode with an ion current limited by space charge; the frequency does not depend on the external circuit but depends only on the collector potential. In a hot-cathode diode with cesium vapor, conditions can be created in which a potential well is formed near the cathode, and cesium ions oscillate in this well. The frequency of oscillations depends on emitter temperature, electrode spacing, potential difference, and the mass of oscillating ions. Frequency-voltage dependence is shown in a graph.

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A diode of this type can be used for microwave generation if the collector is made negative and cesium ions from the cathode are attracted towards it. Owing to the positive space charge limiting the current, a potential well is formed in which electrons may oscillate. The frequency is calculated as in the case of ion oscillation, except that electron mass is substituted for ion mass. The temperature of the emitter must be such as to produce both ions and electrons. In an experimental diode with indirectly heated tantalum emitter and cesium vapor, oscillations were detected in the range of 150 - 1000 Mc/s in a narrow temperature range around 1900°K. Frequency was found to be in good agreement with the analytical value. Wide frequency variations are possible. There is 1 figure.

SUBMITTED: August 13, 1962

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KIRICHENKO, G.S.

L 18247-63 EWT(1)/EWG(k)/BDS/EED(b)-2/ES(w)-2 AFFTC/ASD/ESD-3/AFWL/ IJP(C)/SSD Pz-4/Pab-4/Pi-4/Po-4 AT

82

ACCESSION NR: AP3002115 Kirichenko S/0185/63/008/006/0624/0627

81

AUTHOR: Gabovy*ch, M. D., Ky*richenko, G. S.

TITLE: Role of the velocity of ions during excitation of plasma oscilations by an ion beam.

SOURCE: Ukrains'kyy fizychnyy zhurnal, v. 8, no. 6, 1963, 624-627

TOPIC TAGS: plasma oscillation, ion beam transmission, ion beam-plasma interaction, stability, ion beam stability, plasma noise level, plasma excitation.

ABSTRACT: The purpose of this investigation was to verify the theory of stability of a slow ion beam when the ion energy increases. Theory predicts the criterion for stability as

$$\frac{V^2}{C_e^2} > \frac{\omega_{+ss}^2}{\omega_e^2}\left\{1+\left(\frac{\omega_{+n}}{\omega_{+ss}}\right)^{2/3}\right\}^3,$$

where V is the velocity of the beam ions, C_e the thermal speed of the electron S,

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An experimental setup was devised by which it was possible to control the ion energy. Oscillations were measured by means of a probe up to a frequency of 4.35 Mcs at various values of delta V, the difference of potential between the emitter and the anode. At delta V value less than 3.5 Volt ions can not reach the probe, and only a noise was registered. At delta V between 4.5 and 13.5 Volt the ion beam excited plasma, so that definite oscillation peaks were observed on the spectrum. As the beam energy increased the oscillation amplitude decreased, and at a voltage exceeding 13.5 Volt it was impossible to observe oscillations because of the noise background. The oscillation amplitude and frequency are shown on fig. 3 of enclosure 01 as functions of ion energy E. The E values were calculated from delta V, the space potential and the contact potential difference between the probe which is coated with a Cs film and the emitter which has no such coating. The measured temperature T sub e reached about 20,000 K. The concentration of beam ions and plasma ions was about equal. The ion energy E was then at its highest value of about 6kT sub e. And when this value was exceeded the system became stable. The experiments substantiated the theory. The orig. art. has: 1 formula, and 3 figures.

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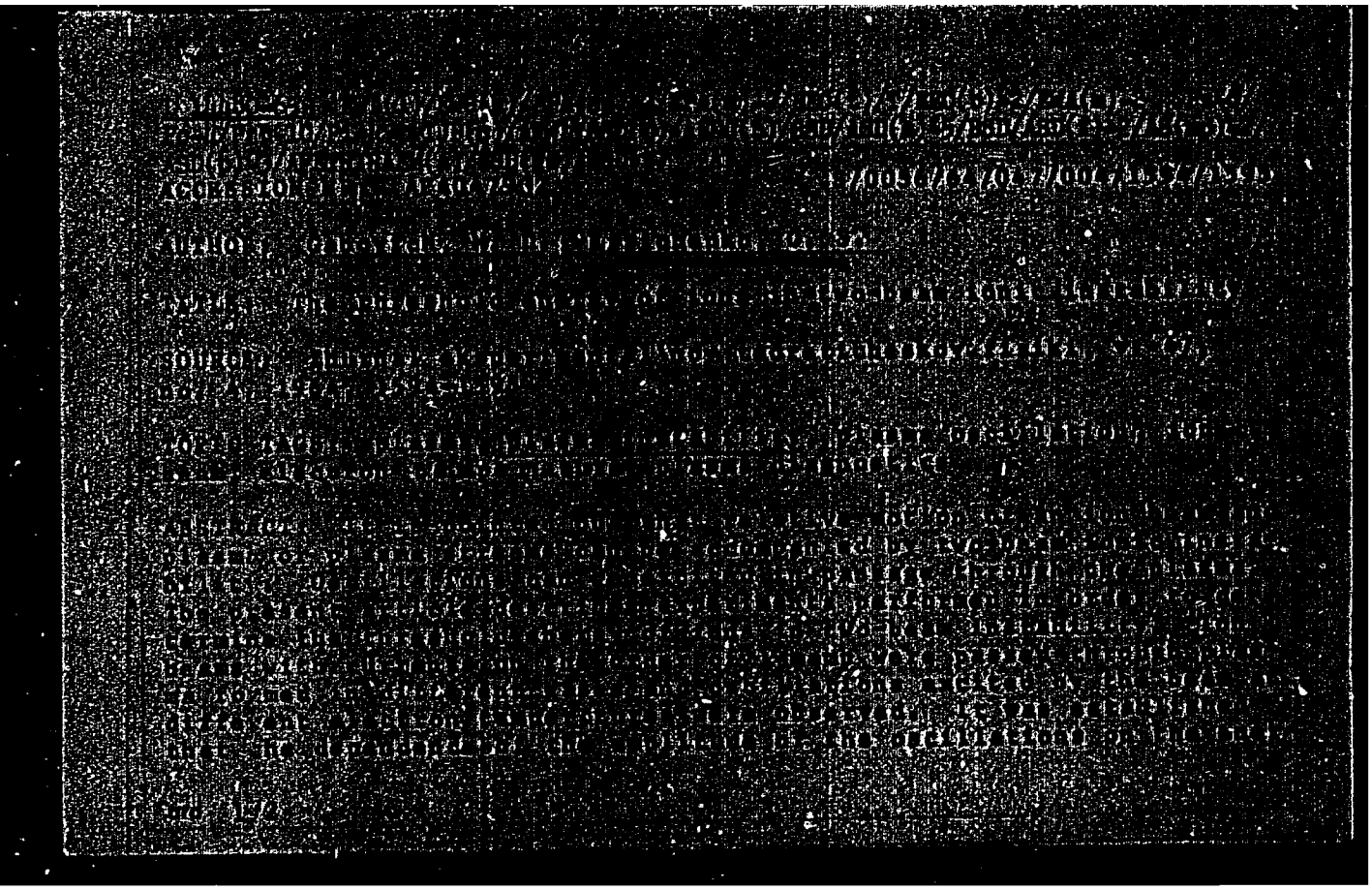

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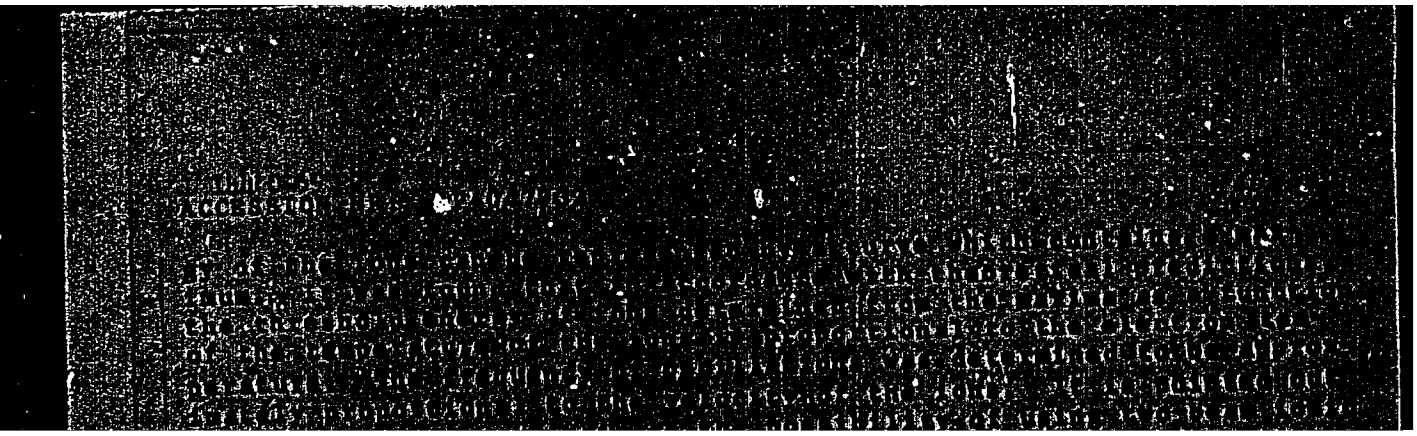

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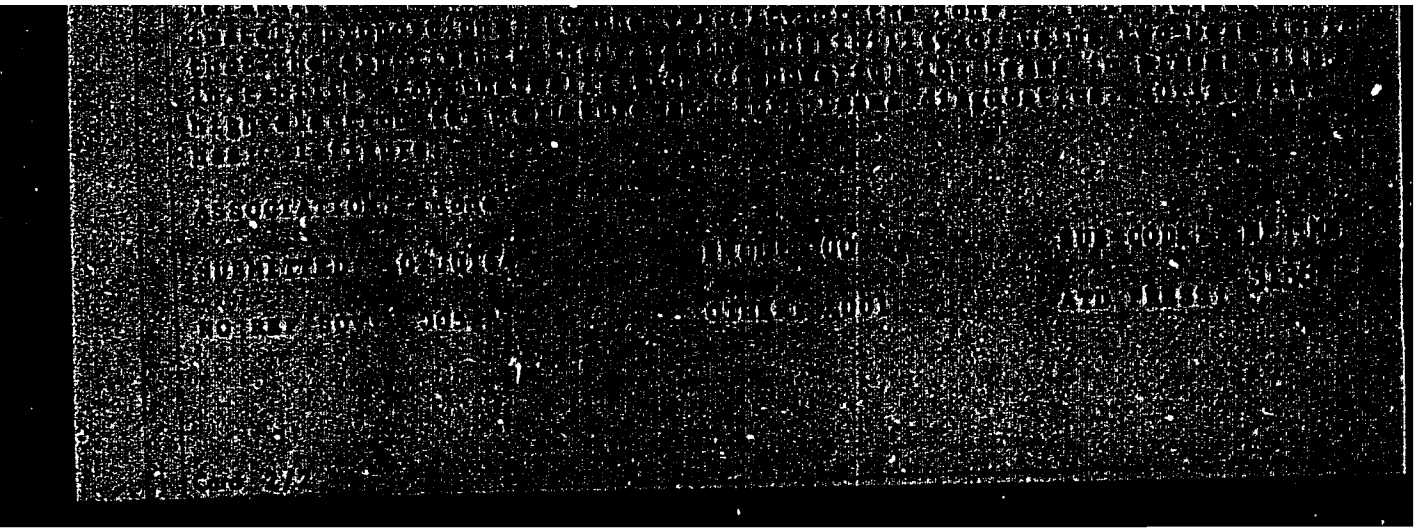

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